

CLAIMS

1. A digital image enhancer comprising:

a deinterlacing processor means receptive to an interlaced video stream, said

5 deinterlacing processor means including a first deinterlacer and a second deinterlacer and providing a deinterlaced video stream; and

a video output processor means receptive to said deinterlaced video stream to provide a scaled, deinterlaced video stream.

10 2. A digital image enhancer as recited in claim 1 wherein said first deinterlacer is operative to analyze progressive frames of said interlaced video stream in an attempt to determine an original source type and sequencing used for the interlaced video stream.

15 3. A digital image enhancer as recited in claim 2 wherein said first deinterlacer is further operative to convert said interlaced video stream into a deinterlaced video stream using a conversion process that is dependent upon said detection of said original source type and sequencing.

20 4. A digital image enhancer as recited in claim 1 wherein said second deinterlacer is operative to reduce motion artifacts detected by a frequency analysis of said interlaced video stream.

25 5. A digital image enhancer as recited in claim 1 wherein said second deinterlacer is operative to detect diagonal features and to smooth said detected diagonal features.

6. A digital image enhancer as recited in claim 1 wherein said deinterlacing processor means processes said deinterlaced video stream in vertical slices.

7. A digital image enhancer as recited in claim 1 wherein said video output processor means is operative to scale said deinterlaced video stream to modify a video display output format of a video output stream.

8. A digital image enhancer as recited in claim 1 wherein said video output processor means includes a data rate synchronizer between a first data rate of said deinterlaced video stream and a second data rate of a video output stream.

9. A digital image enhancer comprising:
a deinterlacing processor receptive to an interlaced video stream and operative to provide a deinterlaced video stream; and
a video output processor receptive to the output of said deinterlacing processor, wherein said deinterlacing processor means processes said interlaced video stream in vertical slices to provide a scaled, deinterlaced video stream.

10. A digital image enhancer as recited in claim 9 wherein said deinterlacing processor is operative to analyze progressive frames of said interlaced video stream in an attempt to determine an original source type and sequencing used for the interlaced video stream.

11. A digital image enhancer as recited in claim 10 wherein said deinterlacing processor is further operative to convert said interlaced video stream into a deinterlaced video stream using a conversion process that is dependent upon said detection of said original source type and sequencing.

12. A digital image enhancer as recited in claim 9 wherein said deinterlacing processor is operative to reduce motion artifacts detected by a frequency analysis of said interlaced video stream.

13. A digital image enhancer as recited in claim 9 wherein said deinterlacing processor is operative to detect diagonal features and to smooth said detected diagonal features.

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14. A digital image enhancer as recited in claim 9 wherein said video output processor is operative to scale said deinterlaced video stream to modify a video display output format of a video output stream.

15. A digital image enhancer as recited in claim 9 wherein said video output processor includes a data rate synchronizer between a first data rate of said deinterlaced video stream and a second data rate of a video output stream.

16. A portable DVD player comprising:

a generally thin prismatic enclosure having a first major surface, a second major surface separated from said first major surface, and side surfaces connecting said first major surface to said second major surface, wherein at least a portion of said first major surface includes a video display, and wherein said enclosure includes a DVD entry port such that a DVD can be inserted into said enclosure; and

a digital processing system including a decoder, an image enhancement means, and a display controller where said decoder receives signals from a DVD inserted into said enclosure to provide a decoded, interlaced video signal, said image enhancement means converts said interlaced video signal to a deinterlaced video signal, and said display controller uses said deinterlaced video signal to provide progressively scanned video on said video display.

17. A portable DVD player as recited in claim 16 wherein said digital processing system includes a microprocessor providing control signals to said decoder, said image enhancement means, and said display controller.

18. A portable DVD player as recited in claim 16 further comprising a DVD transport mechanism associated with said port in said enclosure.

5 19. A portable DVD player as recited in claim 18 wherein said DVD transport mechanism comprises a drawer which extends from a side surface for the loading and unloading of a DVD and which retracts into said enclosure for the playing of said DVD.

10 20. A portable DVD player as recited in claim 16 further comprising an infrared port associated with said enclosure and coupled to said digital processing system.

21. A portable DVD player as recited in claim 20 further comprising an infrared remote control providing control commands to said DVD player via said infrared port.

15 22. A portable DVD player as recited in claim 16 further comprising a docking station coupled to a video monitor, wherein said docking station includes a docking port receptive to at least a portion of said enclosure.

20 23. A portable DVD player as recited in claim 16 further comprising shock isolation means for reducing the affect of physical shocks impinging upon said enclosure.

24. A method for processing digital video comprising:
deinterlacing an interlaced video stream by at least one of a number of
25 deinterlacing methods to produce a deinterlaced video stream; and
scaling said deinterlaced video stream.

25. A method for processing digital video as recited in claim 24 wherein said

deinterlacing methods include at least one of an original source detection method, a diagonal feature detection method, and a motion artifact detection method.

26. A method for processing digital video as recited in claim 24 wherein said
5 deinterlacing methods include processing said interlaced video stream in vertical slices.

27. A method for processing digital video as recited in claim 24 wherein said scaling includes a horizontal scaling of the deinterlaced video stream.

28. A method for processing digital video as recited in claim 24 wherein said
10 scaling includes a data rate synchronizer between a first data rate of said deinterlaced video stream and a second data rate of a video output stream.